

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM NO. R7-2002-1000
FOR
DISCHARGES OF EXTRACTED AND TREATED GROUNDWATER
RESULTING FROM THE CLEANUP OF GROUNDWATER POLLUTED BY
VOLATILE ORGANIC CONSTITUENTS INTO SURFACE WATERS

MONITORING

1. The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted by a laboratory certified by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR Part 136), promulgated by the USEPA.
2. Samples shall be collected at the location specified in the Notice of Authorization (NOA) granted by the Regional Board's Executive Officer. If no location is specified, sampling shall be conducted at the most representative sampling point available.
3. If the facility is not in operation, or there is no discharge during a required reporting period, the discharger shall forward a letter to the Regional Board indicating that there has been no activity during the required reporting period.

START-UP PHASE AND START-UP REPORTING

1. The discharger shall inform the Regional Board in writing of the location of all sampling stations and the expected start-up date at least 10 days prior to beginning operational start-up.
2. During the original start-up of the treatment facility, sampling of the system influent and treated effluent must be performed on the first (1st) and fifth (5th) day of operation. On the 1st day of operation, the system shall be allowed to run until at least three (3) extraction well volumes are removed and until three (3) consecutive readings taken at least one (1) hour apart for pH, conductivity, and temperature are within five (5) percent of each other. Once these criteria are met, the system influent and treated effluent shall be sampled and submitted for analysis. During this phase of the startup, all system effluent shall be discharged into a holding tank or sanitary sewer (not to the receiving water) until the results of the analysis show that the discharge is within the effluent limits established in Board Order No. R7-2002-1000 and in the NOA.
3. If the analysis of samples collected during the 1st day of operation indicate that the system is in compliance, the system shall be operated for a total of five (5) days with the system effluent being discharged into the receiving water. A second series of samples shall be collected during the fifth day. The effluent may continue to be discharged into the receiving water while the samples are being analyzed if the results are received within 48 hours of sampling. If the samples from the 5th day samples indicate compliance, discharge to the receiving water shall continue.
4. If the treatment system is shut down more than 48 hours during the original start-up, the original start-up procedures and sampling must be repeated.
5. A report on the start-up phase shall be submitted to the Regional Board no more than fifteen calendar days after completion of the start-up phase. The report should contain a summary of all

monitoring results, copies laboratory reports, chain of custody forms, flow rates, and a description of any changes or modifications to the treatment system.

INFLUENT MONITORING

1. Extracted groundwater shall be monitored for the following constituents immediately prior to being treated. All samples shall be taken between 6 a.m. and 6 p.m.:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Gasoline Range Organics (BTEX, MTBE, & Oxygenates) EPA Method 8260/8015	µg/L ¹	Grab	1 st and 5 th day Semi-Annual thereafter

EFFLUENT MONITORING

1. Treated groundwater shall be monitored for the following constituents. All samples shall be taken between 6 a.m. and 6 p.m.:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow Rate	GPD ²	Continuous	Continuous ³
PH	pH units	Grab	Daily ³ for 5 days Monthly thereafter
Temperature	°C	Grab	Daily for 5 days Monthly thereafter
Conductivity	u mhos/cm @ 25 °C	Grab	Daily for 5 days Monthly thereafter
Dissolved Oxygen	mg/L ⁴	Grab	Daily for 5 days Monthly thereafter
Total Dissolved Solids (TDS)	mg/L	Grab	1 st and 5 th day Monthly thereafter
Gasoline Range Organics (BTEX, MTBE & Oxygenates) EPA Method 8260/8015	µg/L	Grab	1 st and 5 th day Monthly 1 st quarter Quarterly thereafter
<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Lead	µg/L	Grab	1 st and 5 th day Monthly 1 st quarter Quarterly 1 st year Annually thereafter

¹ µg/L – Micrograms-per-Liter

² GPD - Gallons-Per-Day

³ Reported Monthly

⁴ mg/L – milligrams-per-Liter

EFFLUENT TOXICITY TESTING

1. The discharger shall conduct chronic and acute toxicity testing on the treated effluent as follows:

<u>Test</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Frequency of Test</u>
Chronic Toxicity	TU _c ⁵	8-hr Comp	Quarterly 1 st year Annually thereafter
Acute Toxicity	TU _a ⁶	8-hr Comp	Quarterly 1 st year Annually thereafter

2. Both test species given below shall be used to measure chronic and acute toxicity:

<u>Species</u>	<u>Effect</u>	<u>Test Duration (Days)</u>	<u>Reference⁷</u>
Fathead Minnow (Pimephales promelas)	Larval Survival and Growth	7	EPA/600/4-91/002 (Chronic) EPA/600/4-90/027F (Acute)
Water Flea (Ceriodaphnia dubia)	Survival and Reproduction	7	EPA/600/4-91/002 (Chronic) EPA/600/4-90/027F (Acute)

3. Toxicity Test References:

- a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition, EPA/600-4-90-027F, August, 1993.
- b. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water for Freshwater Organisms, Third Edition, EPA/600/4-91/002, July 1994.
- c. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System (NPDES) Program, EPA 833-R-00-003, June 2000.
- d. Method Guidance and Recommendations for Whole Effluent Testing, EPA 821-B-00-004, July 2000.
- e. Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, memorandum dated April 10, 1996 from Tudor Davies, Director of the EPA Office of Water's Office of Science and Technology.

⁵ TU_c - Chronic Toxicity Units

⁶ TU_a - Acute Toxicity Units

⁷ Additional references are listed in the Toxicity Test Reference Section.

QUALITY ASSURANCE

1. Dilution and control waters may be obtained from an unaffected area of receiving waters. Synthetic (standard) dilution is an option and may be used if the above source is suspected to have toxicity greater than 1.0 TU_c.
2. A series of at least five (5) dilutions and a control shall be tested for chronic toxicity testing and may be used for acute toxicity testing. The series shall include the following concentrations: 12.5, 25, 50, 75, and 100 percent effluent.
3. For the acute toxicity testing using a t-test, two (2) dilutions shall be used, i.e., 100 percent effluent and a control (when a t-test is used instead of an LC50).
4. If organisms are not cultured in-house, concurrent testing with a referenced toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc.).
5. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the toxicity test references, then the permittee must re-sample and retest within 14 days or as soon as possible.

DEFINITION OF TOXICITY

1. Chronic toxicity measures sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to an effluent or ambient waters compared to that of the control organisms.
2. Chronic toxicity shall be measured in TU_c, where $TU_c = 100/NOEC$. The no observed effect concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of toxicant to which the values for the observed responses are not statistically significantly different from the controls).
3. Acute toxicity is a measure of primarily lethal effects that occur over a 96 hour period. Acute toxicity for Pimephales promelas can be calculated from the results of the chronic toxicity test for Pimephales promelas and reported along with the results of each chronic test. Acute toxicity for Ceriodaphnia dubia cannot be calculated from the results of the chronic toxicity test for Ceriodaphnia dubia because the test design is not amenable to calculation of a lethal concentration (LC50) value as needed for the acute requirement.
4. Acute toxicity shall be measured in Tu_a, where $Tu_a = 100/LC50$ or as pass/fail using a t-test. LC50 is the toxicant concentration that would cause death in 50 percent of the test organisms.

REPORTING OF BIOASSAY RESULTS

1. The discharger shall submit the analysis and results of the toxicity tests, including any accelerated testing, in toxicity units with the discharge monitoring reports for the month in which the last test is conducted.

REPORTING OF A TOXICITY IDENTIFICATION EVALUATION AND/OR RESULTS OF THE TOXICITY
REDUCTION EVALUATION WORKPLAN

1. If a Toxicity Identification Evaluation (TIE) is conducted the discharger shall submit the results of the TIE with the discharge monitoring reports for the month in which the final report is completed.
2. If the Toxicity Reduction Evaluation (TRE) Workplan has been initiated, the discharger shall report on the progress of the actions being taken and include this information with each monthly monitoring report.

REPORTING

1. The discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with Waste Discharge Requirements (WDRs).
2. The discharger shall report with each sample result the applicable Minimum Level (as described in the California Toxics Policy) and the laboratory current Method Detection Limit, as determined by the procedure in 40 CFR 136.
3. The discharger shall report the results of acute and chronic toxicity testing, TRE and TIE as required in the previous section entitled, "Effluent Toxicity Testing".
4. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurement(s);
 - b. The individual(s) who performed the sampling or measurement(s);
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or method used; and
 - f. The results of such analyses.
5. The results of any analysis take, more frequently than required at the locations specified in this Monitoring and Reporting Program shall be reported to the Regional Board.
6. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.
7. Each report shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations".
8. A duly authorized representative of the discharger may sign the documents if:

- a. The authorization is made in writing by the person described above;
 - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
 - c. The written authorization is submitted to the Regional Board's Executive Officer.
9. Reporting of any failure in the remediation project shall be as described in Provision No. 11. Results of any analysis performed as a result of a failure of the remediation project shall be provided within 10 days after collection of the samples.
 10. The discharger shall attach a cover letter to the Discharge Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.
 11. Daily, Semi-Weekly and Monthly monitoring reports shall be submitted to the Regional Board by the 15th day of the following month. Quarterly monitoring reports shall be submitted to the Regional Board by January 15, April 15, July 15, and October 15, of each year. Semi-Annual monitoring reports shall be submitted to the Regional Board by January 15 and July 15 of each year. Annual monitoring reports shall be submitted to the Regional Board by January 15 of each year.
 12. Submit monitoring reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring, Suite 100
Palm Desert, CA 92260

Ordered

by:

Executive Officer

Date